

## AMENDMENTS TO THE CLAIMS

Please cancel claims 1-20 and insert new claims 21-87 shown below. Since all claims are canceled and replaced with new claims, no marked and clean versions are herewith submitted.

(~~21~~. A variable sensor, said variable sensor comprising:  
a rigid support board, said board at least in part  
supporting  
a sheet, said sheet positioned between said board and  
a depressible resilient dome cap, said dome cap structured  
to provide, upon depression of said dome cap, a snap-through  
threshold tactile feedback to a human user.

*a*<sup>2</sup> ~~22~~. A variable sensor according to claim ~~21~~<sup>1</sup> wherein  
said board is a circuit board supporting electrical circuit  
traces, and

said variable sensor is combined with means for variably  
controlling imagery according to variable depressive force  
applied by the human user.

~~23~~<sup>3</sup>. A variable sensor according to claim ~~22~~<sup>2</sup> wherein said  
dome cap has a deformable surface having an apex located to  
contact said sheet.

~~24~~<sup>3</sup>. A variable sensor according to claim ~~23~~<sup>3</sup> wherein said  
sheet supports electrically conductive material.

~~25~~<sup>5</sup>. A variable sensor according to claim ~~24~~<sup>3</sup> wherein said  
conductive material is located to contact said circuit traces.

~~26~~<sup>6</sup>. A variable sensor according to claim ~~25~~<sup>5</sup> wherein said  
circuit traces are interdigitated.

~~27~~<sup>7</sup>. A variable sensor according to claim ~~25~~<sup>5</sup> wherein said  
imagery is an electronic game displayed by a television.

<sup>8</sup>  
28. A variable sensor according to claim <sup>2</sup>22 wherein said variable sensor is positioned at least in part within a hand operated device, said device includes a first pivotally mounted button, said first pivotally mounted button positioned to be operated by a first human finger of the human user.

<sup>9</sup>  
29. A variable sensor according to claim <sup>8</sup>28 wherein said device includes a second pivotally mounted button, said second pivotally mounted button positioned to be operated by a second human finger of the human user.

<sup>10</sup>  
30. A variable sensor according to claim <sup>19</sup>29 wherein said device includes means for providing active tactile feedback.

<sup>11</sup>  
31. A variable sensor according to claim <sup>10</sup>30 wherein said first pivotally mounted button is variably depressible to at least in part variably control said imagery.

<sup>12</sup>  
32. A variable sensor according to claim <sup>11</sup>31 wherein said second pivotally mounted button is variably depressible to at least in part variably control said imagery, said imagery displayed by a television.

<sup>13</sup>  
33. A variable sensor according to claim <sup>12</sup>32 wherein said variable sensor outputs signals representing On/off data and proportional data.

<sup>14</sup>  
34. A variable sensor according to claim <sup>2</sup>22 wherein said variable sensor is positioned at least in part within a hand operated device, said hand operated device includes a right-hand area and a left-hand area, said variable sensor is located in said right-hand area, said imagery is an electronic game displayed by a television.

<sup>15</sup> 35. A variable sensor according to claim <sup>1414</sup> 34 wherein said variable sensor is activated by depression of a thumb depressible button, said thumb depressible button located in said right-hand area and positioned to be depressed by a right hand thumb of the user.

<sup>16</sup> 36. A variable sensor according to claim <sup>15</sup> 35 wherein said variable sensor outputs signals representing On/off data and proportional data.

<sup>17</sup> 37. A variable sensor according to claim <sup>16</sup> 36 wherein said hand operated device includes a second variable sensor located in said right-hand area.

<sup>18</sup> 38. A variable sensor according to claim <sup>17</sup> 37 wherein said hand operated device includes a third variable sensor and a fourth variable sensor, the second, third and fourth sensors associated with second, third and fourth independent buttons, the buttons located in said right-hand area positioned to be depressed by a right-hand thumb of the user.

<sup>19</sup> 39. A variable sensor according to claim <sup>21</sup> 38 wherein electrically conductive material is carried by said dome cap, and said variable sensor is combined with means for variably controlling imagery according to variable depressive force applied by a human finger of the human user.

<sup>20</sup> 40. A variable sensor according to claim <sup>19</sup> 39 wherein said conductive material has a deformable substantially convexed surface having an apex.

<sup>21</sup> 41. A variable sensor according to claim <sup>20</sup> 40 wherein said variable sensor is structured in combination with means for providing active tactile feedback.

<sup>22</sup>  
~~42~~. A variable sensor according to claim <sup>21</sup>~~21~~ wherein said sheet is an electrically non-conductive sheet supporting electrically conductive material, and

said variable sensor is combined with means for variably controlling imagery according to variable depressive force applied by a human finger of the human user.

<sup>23</sup>  
~~43~~. A variable sensor according to claim <sup>22</sup>~~42~~ wherein said conductive material contacts circuit traces.

<sup>24</sup>  
~~44~~. A variable sensor according to claim <sup>23</sup>~~43~~ wherein said circuit traces comprise a first circuit trace and a second circuit trace, said conductive material contacting between said first circuit trace and said second circuit trace.

<sup>25</sup>  
~~45~~. A variable sensor according to claim <sup>24</sup>~~44~~ wherein a four way rocker is located in said left-hand area of said housing.

<sup>26</sup>  
~~46~~. A variable sensor according to claim <sup>25</sup>~~45~~ wherein said imagery is an electronic game displayed by a television.

<sup>27</sup>  
~~47~~. A variable sensor according to claim <sup>24</sup>~~44~~ wherein said variable sensor is structured in combination with means for providing active tactile feedback.

<sup>28</sup>  
~~48~~. A variable sensor according to claim <sup>27</sup>~~47~~ wherein said variable sensor outputs signals representing On/off data and proportional data.

<sup>29</sup>  
~~49~~. A variable sensor according to claim <sup>27</sup>~~47~~ wherein said variable sensor is positioned at least in part within a hand-held housing, and said means for providing active tactile feedback is also at least in part within said housing.

<sup>30</sup>  
~~50~~. A variable sensor according to claim <sup>29</sup>~~49~~ wherein said

imagery is an electronic game displayed by a television.

31  
51. A variable sensor according to claim 30 wherein a second variable sensor is positioned within said right-hand area of said housing, said second variable sensor actuated by variable depression of a second single individual button.

32  
52. A variable sensor according to claim 31 wherein a four way rocker is located in said left-hand area of said housing.

33  
53. A variable sensor according to claim 32 wherein a third variable sensor is positioned within said right-hand area of said housing, said third variable sensor actuated by variable depression of a third single individual button, and a fourth variable sensor is positioned within said right-hand area of said housing, said fourth variable sensor actuated by variable depression of a fourth single individual button.

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54. A variable sensor operated by depression of a single button, said single button depressed by a finger of a user, said variable sensor combined with means for controlling game imagery, said variable sensor comprising:

sensor means for creating a proportional output, said proportional output representing varying depression applied by the finger of the user, said proportional output at least in part for controlling the game imagery,

at least a snap-through threshold  
feedback means for providing tactile feedback to the user.

35  
55. A variable sensor according to claim 34 wherein said feedback means further comprises means for active tactile feedback.

36  
56. A variable sensor according to claim 34 wherein said sensor means includes a resilient dome cap depressible by said button.

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B <sup>37</sup>~~57~~. A variable sensor according to claim <sup>36</sup>~~56~~ wherein said feedback means comprises said dome cap supplying a <sup>Said</sup> snap-through threshold tactile feedback through said button to the finger of the user.

<sup>38</sup>~~58~~. A variable sensor according to claim <sup>37</sup>~~57~~ wherein said dome cap comprises rubber material.

<sup>39</sup>~~59~~. A variable sensor according to claim <sup>37</sup>~~57~~ wherein said dome cap comprises metallic material.

<sup>40</sup>~~60~~. A variable sensor according to claim <sup>37</sup>~~57~~ wherein said variable sensor is located in a two-hand operated device, and said sensor means includes a first proportional sensor activated by depression of said button, and a second proportional sensor activated by depression of a second button.

<sup>41</sup>~~61~~. A variable sensor according to claim <sup>40</sup>~~60~~ wherein the buttons and the sensors are located in a right-hand area of said two-hand operated device.

<sup>42</sup>~~62~~. A variable sensor according to claim <sup>41</sup>~~61~~ wherein the buttons are positioned for thumb depression.

<sup>43</sup>~~63~~. A variable sensor according to claim <sup>42</sup>~~62~~ wherein said feedback means comprises means for active tactile feedback.

<sup>44</sup>~~64~~. A variable sensor combined with means for variably controlling electronic imagery according to variable depressive force applied to said variable sensor by only a single human finger, said variable sensor comprising:

a depressible resilient dome cap, said dome cap structured to provide, upon depression of said dome cap, a snap-through threshold tactile feedback to the human finger.

<sup>45</sup>  
~~65~~. A variable sensor according to claim ~~64~~<sup>44</sup> wherein electrically conductive material is carried by said dome cap.

<sup>46</sup>  
~~66~~. A variable sensor according to claim ~~65~~<sup>45</sup> wherein said conductive material deforms under said depressive force.

<sup>47</sup>  
~~67~~. A variable sensor according to claim ~~66~~<sup>46</sup> wherein said variable sensor is located in a right-hand area of a housing, and a four way rocker is located in a left-hand area of said housing.

<sup>48</sup>  
~~68~~. A variable sensor according to claim ~~66~~<sup>47</sup> wherein said variable sensor is structured in combination with means for providing active tactile feedback.

<sup>49</sup>  
~~69~~. A variable sensor according to claim ~~66~~<sup>47</sup> wherein said variable sensor outputs signals representing On/off data and proportional data.

<sup>50</sup>  
~~70~~. A variable sensor according to claim ~~69~~<sup>49</sup> wherein said variable sensor is structured in combination with means for providing active tactile feedback.

<sup>51</sup>  
~~71~~. A variable sensor according to claim ~~70~~<sup>50</sup> wherein said variable sensor is activatable by depression of a button, said sensor and said button are positioned in a right-hand area of a housing, and a four way rocker is positioned in a left-hand area of said housing.

<sup>52</sup>  
~~72~~. A variable sensor according to claim ~~71~~<sup>51</sup> wherein said electronic imagery is an electronic game displayed by a television.

<sup>53</sup>  
~~73~~. A variable sensor according to claim ~~72~~<sup>52</sup> wherein said housing is hand-held, and said means for providing active tactile feedback is located within said housing.

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 cont.

<sup>54</sup>  
~~74~~. A variable sensor according to claim ~~73~~<sup>53</sup> wherein a second variable sensor is positioned within said housing, said second variable sensor actuated by variable depression of a second button, said second button located in said right-hand area of said housing.

<sup>55</sup>  
~~75~~. A variable sensor according to claim ~~74~~<sup>54</sup> wherein a third variable sensor is positioned within said housing, said third variable sensor actuated by variable depression of a third single individual button positioned in said right-hand area of said housing, and a fourth variable sensor is positioned within said housing, said fourth variable sensor actuated by variable depression of a fourth single individual button positioned in said right-hand area of said housing.

<sup>56</sup>  
~~76~~. A method of using a variable pressure analog sensor, depressed by a human thumb, to control variable movement of imagery in an electronic game, said method including the steps:  
 a) decreasing pressure on said analog sensor, followed by  
 b) receiving a soft snap tactile feedback, followed by  
 c) increasing pressure on said analog sensor, said increasing pressure applied according to said imagery and substantially because of said receiving a soft snap tactile feedback.

<sup>57</sup>  
~~77~~. A method according to claim ~~76~~<sup>56</sup> wherein said variable movement of imagery is movement of a viewpoint through three-dimensional graphics.

<sup>58</sup>  
~~78~~. A method according to claim ~~76~~<sup>56</sup> wherein said variable movement of imagery is variable movement of a game object.

<sup>59</sup>  
~~79~~. A method according to claim ~~78~~<sup>58</sup> wherein said game object is a three-dimensional game object located within a three-



dimensional graphics display.

<sup>60</sup>  
~~80~~. A method according to claim ~~76~~<sup>56</sup> wherein said variable movement of imagery is movement of a game character in three-dimensional graphics.

<sup>61</sup>  
~~81~~. A method of using a variable sensor depressed by a human finger to variably control movement in an electronic game, said method including the steps:

- a) depressing said <sup>variable</sup>~~analog~~ sensor with varying pressure;  
 b) receiving a user discernable <sup>a snap-through threshold</sup> tactile feedback.

<sup>62</sup>  
~~82~~. A method according to claim 81 wherein said user discernable tactile feedback <sup>is a snap-through threshold</sup> tactile feedback.

<sup>63</sup>  
~~83~~. A method according to claim ~~82~~<sup>61</sup> wherein said depressing includes depressing harder to make a controllable game character, of said electronic imagery, jump higher.

<sup>64</sup>  
~~84~~. A method according to claim ~~82~~<sup>61</sup> wherein said depressing includes increasing depressive pressure to make a simulated race car, of said electronic imagery, slow according to the increasing depressive pressure.

<sup>65</sup>  
~~85~~. A method of variably controlling electronic imagery by using a variable sensor, said method including the steps:

- a) pressing, with a human finger, a button associated with the variable sensor;  
 b) receiving, through said finger, a snap-through threshold tactile feedback.

<sup>66</sup>  
~~86~~. A method of controlling electronic imagery according to claim ~~85~~<sup>64</sup> wherein said pressing includes pressing harder to make a controllable game character, of said electronic imagery, jump higher.

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